

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Churchill 28M-443

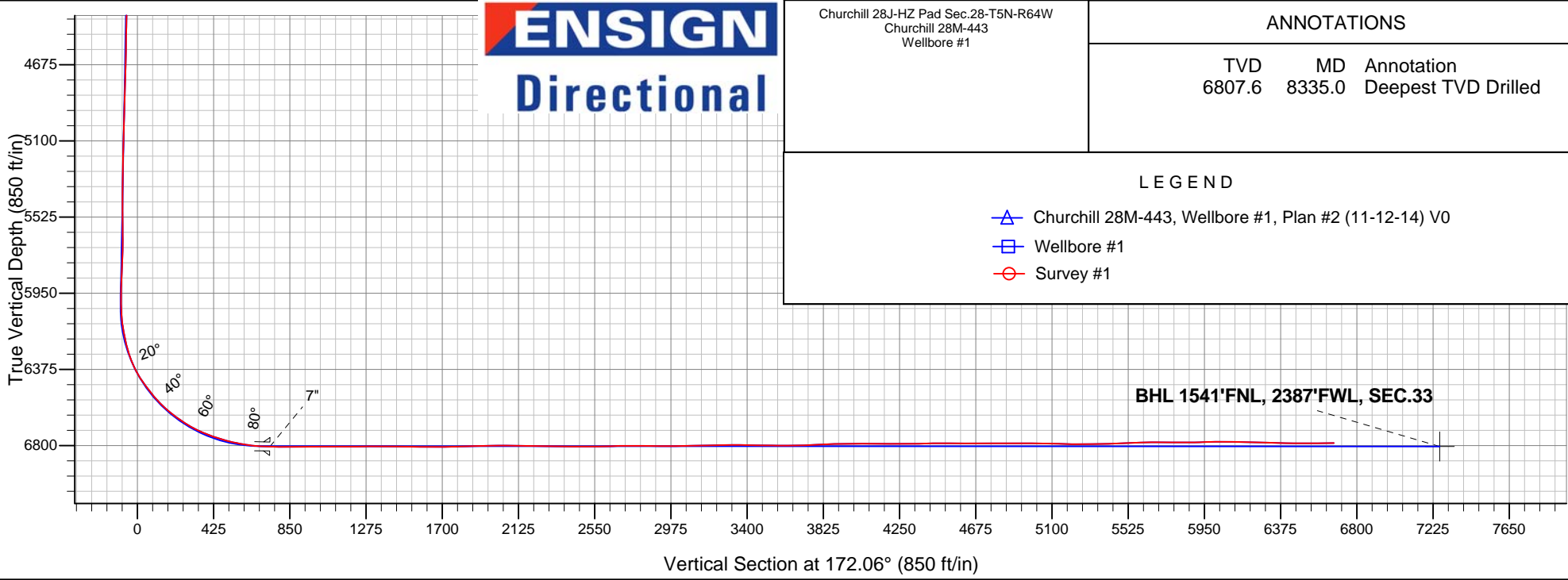
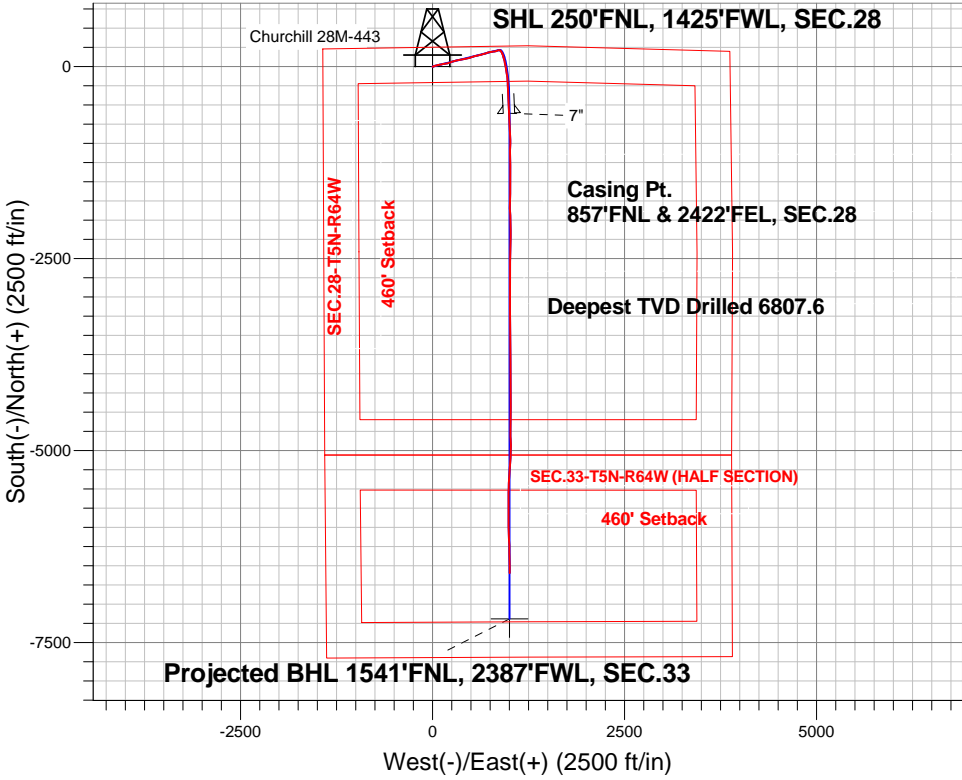
Surface Location: Churchill 28J-HZ Pad Sec.28-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4632.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1381539.28	3262115.23	40.376910	-104.559170	
Ensign Rig# 136 RKB - 13' WELL @ 4645ft (Ensign Rig# 136 RKB - 13')						

FINAL SURVEY

Projected Bottom Hole Location  
13369'MD 6786'TVD 6596'S & 1006'E of SHL  
90.6 degree Incl @ 179.0 degree AZM





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T5N-R64W**

**Churchill 28J-HZ Pad Sec.28-T5N-R64W**

**Churchill 28M-443**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**16 December, 2014**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Churchill 28M-443
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4645ft (Ensign Rig# 136 RKB - 13')
<b>Site:</b>	Churchill 28J-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4645ft (Ensign Rig# 136 RKB - 13')
<b>Well:</b>	Churchill 28M-443	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.28-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Churchill 28J-HZ Pad Sec.28-T5N-R64W			
Site Position:		Northing:	1,381,533.43ft	Latitude:	40.376900
From:	Lat/Long	Easting:	3,261,903.54ft	Longitude:	-104.559930
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.61 °

Well	Churchill 28M-443					
Well Position	+N-S	0.0 ft	Northing:	1,381,539.28 ft	Latitude:	40.376910
	+E-W	0.0 ft	Easting:	3,262,115.23 ft	Longitude:	-104.559170
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,632.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/21/2014	8.29	66.95	52,780

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	172.06	

<b>Survey Program</b>	<b>Date</b>	12/16/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
121.0	13,369.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	156.60	1.0	0.0	0.0	0.0	0.25	0.25	0.00
<b>SHL 250'FNL, 1425'FWL, SEC.28</b>									
121.0	0.30	156.60	121.0	-0.3	0.1	0.3	0.25	0.25	0.00
212.0	0.50	142.60	212.0	-0.8	0.5	0.9	0.24	0.22	-15.38
309.0	0.40	96.00	309.0	-1.2	1.1	1.3	0.38	-0.10	-48.04
403.0	0.70	135.70	403.0	-1.6	1.8	1.9	0.50	0.32	42.23
497.0	0.90	105.10	497.0	-2.2	2.9	2.6	0.49	0.21	-32.55
590.0	1.10	71.20	590.0	-2.1	4.4	2.7	0.66	0.22	-36.45
684.0	2.30	68.60	683.9	-1.2	7.1	2.1	1.28	1.28	-2.77
777.0	4.00	59.30	776.8	1.2	11.6	0.4	1.90	1.83	-10.00
871.0	5.30	66.60	870.5	4.6	18.4	-2.0	1.52	1.38	7.77

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Churchill 28M-443
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<b>Site:</b>	Churchill 28J-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4645ft (Ensign Rig# 136 RKB - 13')
<b>Well:</b>	Churchill 28M-443	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
883.0	5.30	68.90	882.4	5.0	19.4	-2.3	1.77	0.00	19.17
963.0	5.70	67.50	962.1	7.8	26.5	-4.1	0.53	0.50	-1.75
1,059.0	6.90	78.60	1,057.5	10.8	36.6	-5.6	1.78	1.25	11.56
1,154.0	8.30	74.20	1,151.6	13.8	48.8	-6.9	1.59	1.47	-4.63
1,252.0	7.90	71.70	1,248.7	17.8	62.0	-9.1	0.54	-0.41	-2.55
1,346.0	9.30	81.90	1,341.6	20.9	75.6	-10.3	2.20	1.49	10.85
1,439.0	8.40	79.70	1,433.5	23.2	89.8	-10.6	1.03	-0.97	-2.37
1,533.0	10.40	81.90	1,526.2	25.6	104.9	-10.9	2.16	2.13	2.34
1,626.0	9.50	79.30	1,617.8	28.2	120.8	-11.3	1.08	-0.97	-2.80
1,720.0	9.10	75.30	1,710.6	31.6	135.6	-12.5	0.81	-0.43	-4.26
1,814.0	10.70	81.10	1,803.2	34.8	151.4	-13.6	2.00	1.70	6.17
1,907.0	9.80	77.40	1,894.7	37.9	167.6	-14.3	1.20	-0.97	-3.98
2,001.0	12.00	80.70	1,987.0	41.2	185.1	-15.2	2.43	2.34	3.51
2,095.0	11.60	76.00	2,079.0	45.1	203.9	-16.4	1.11	-0.43	-5.00
2,188.0	10.50	70.30	2,170.3	50.2	221.0	-19.2	1.67	-1.18	-6.13
2,282.0	9.40	65.40	2,262.9	56.3	236.0	-23.1	1.48	-1.17	-5.21
2,376.0	9.60	69.60	2,355.6	62.2	250.3	-27.0	0.77	0.21	4.47
2,483.0	9.60	76.70	2,461.1	67.3	267.4	-29.8	1.11	0.00	6.64
2,574.0	9.20	70.20	2,550.9	71.6	281.6	-32.0	1.25	-0.44	-7.14
2,664.0	9.70	76.10	2,639.7	75.8	295.7	-34.2	1.21	0.56	6.56
2,755.0	9.70	81.80	2,729.4	78.8	310.8	-35.1	1.05	0.00	6.26
2,845.0	10.30	79.50	2,818.0	81.3	326.2	-35.4	0.80	0.67	-2.56
2,935.0	10.20	79.10	2,906.6	84.3	341.9	-36.2	0.14	-0.11	-0.44
3,026.0	9.70	77.70	2,996.2	87.4	357.3	-37.2	0.61	-0.55	-1.54
3,116.0	10.00	80.50	3,084.9	90.3	372.4	-38.0	0.63	0.33	3.11
3,190.0	9.60	74.90	3,157.8	93.0	384.7	-38.9	1.40	-0.54	-7.57
3,297.0	9.40	77.00	3,263.3	97.3	401.9	-40.8	0.37	-0.19	1.96
3,387.0	9.50	83.00	3,352.1	99.9	416.4	-41.4	1.10	0.11	6.67
3,477.0	10.40	77.90	3,440.8	102.5	431.7	-41.8	1.40	1.00	-5.67
3,568.0	9.80	76.30	3,530.3	106.0	447.3	-43.2	0.73	-0.66	-1.76
3,658.0	10.80	77.00	3,618.9	109.7	462.9	-44.7	1.12	1.11	0.78
3,748.0	10.90	77.00	3,707.3	113.5	479.4	-46.2	0.11	0.11	0.00
3,838.0	10.40	71.00	3,795.7	118.1	495.4	-48.5	1.35	-0.56	-6.67
3,929.0	9.90	71.00	3,885.3	123.3	510.6	-51.6	0.55	-0.55	0.00
4,019.0	9.70	70.70	3,974.0	128.3	525.0	-54.6	0.23	-0.22	-0.33
4,110.0	9.70	78.60	4,063.7	132.4	539.8	-56.5	1.46	0.00	8.68
4,200.0	9.30	74.60	4,152.5	135.8	554.2	-57.9	0.86	-0.44	-4.44
4,291.0	9.70	74.90	4,242.2	139.8	568.7	-59.8	0.44	0.44	0.33
4,381.0	9.90	81.20	4,330.9	142.9	583.7	-60.9	1.21	0.22	7.00
4,472.0	9.30	77.00	4,420.6	145.8	598.6	-61.7	1.01	-0.66	-4.62
4,562.0	10.30	78.10	4,509.3	149.1	613.5	-62.9	1.13	1.11	1.22
4,652.0	9.80	75.80	4,597.9	152.6	628.8	-64.3	0.71	-0.56	-2.56
4,742.0	10.50	73.70	4,686.5	156.8	644.1	-66.3	0.88	0.78	-2.33
4,833.0	9.70	70.20	4,776.1	161.7	659.3	-69.1	1.11	-0.88	-3.85
4,923.0	9.90	71.70	4,864.8	166.7	673.8	-72.0	0.36	0.22	1.67
5,014.0	10.50	75.40	4,954.4	171.3	689.2	-74.4	0.98	0.66	4.07
5,104.0	9.20	73.20	5,043.0	175.4	704.1	-76.4	1.50	-1.44	-2.44
5,195.0	8.90	71.20	5,132.9	179.8	717.7	-78.9	0.48	-0.33	-2.20
5,285.0	8.70	74.70	5,221.9	183.8	730.9	-81.1	0.63	-0.22	3.89
5,376.0	9.60	78.40	5,311.7	187.2	744.9	-82.4	1.18	0.99	4.07
5,466.0	10.00	78.80	5,400.4	190.2	759.9	-83.4	0.45	0.44	0.44
5,557.0	9.60	84.40	5,490.1	192.5	775.2	-83.5	1.14	-0.44	6.15
5,647.0	9.80	83.90	5,578.8	194.0	790.3	-82.9	0.24	0.22	-0.56
5,737.0	11.40	81.40	5,667.2	196.2	806.7	-82.8	1.85	1.78	-2.78

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<b>Well:</b>	Churchill 28M-443	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,828.0	10.90	72.30	5,756.5	200.1	823.8	-84.4	2.01	-0.55	-10.00
5,918.0	9.40	66.80	5,845.1	205.6	838.7	-87.7	1.98	-1.67	-6.11
6,009.0	10.20	72.10	5,934.8	211.0	853.2	-91.1	1.32	0.88	5.82
6,054.0	9.30	77.50	5,979.1	213.0	860.5	-92.1	2.85	-2.00	12.00
6,099.0	8.40	92.00	6,023.6	213.7	867.4	-91.8	5.33	-2.00	32.22
6,144.0	8.80	111.50	6,068.1	212.3	873.9	-89.5	6.51	0.89	43.33
6,189.0	10.50	119.70	6,112.5	209.0	880.6	-85.3	4.85	3.78	18.22
6,235.0	12.70	137.50	6,157.5	203.2	887.7	-78.6	9.08	4.78	38.70
6,280.0	13.80	143.10	6,201.3	195.3	894.2	-69.8	3.75	2.44	12.44
6,325.0	14.90	150.30	6,244.9	186.0	900.3	-59.8	4.65	2.44	16.00
6,370.0	18.60	155.10	6,288.0	174.4	906.2	-47.5	8.77	8.22	10.67
6,416.0	22.80	160.00	6,331.1	159.4	912.4	-31.8	9.87	9.13	10.65
6,461.0	26.50	163.00	6,371.9	141.6	918.3	-13.3	8.68	8.22	6.67
6,506.0	31.30	165.10	6,411.3	120.7	924.2	8.2	10.90	10.67	4.67
6,551.0	35.70	166.70	6,448.8	96.6	930.3	32.9	9.97	9.78	3.56
6,597.0	37.80	166.80	6,485.7	69.8	936.6	60.3	4.57	4.57	0.22
6,642.0	39.00	167.20	6,521.0	42.6	942.9	88.1	2.72	2.67	0.89
6,687.0	43.30	168.40	6,554.8	13.6	949.1	117.7	9.71	9.56	2.67
6,732.0	48.00	170.40	6,586.3	-18.0	955.0	149.8	10.92	10.44	4.44
6,777.0	51.00	170.50	6,615.5	-51.7	960.7	184.0	6.67	6.67	0.22
6,822.0	53.50	171.40	6,643.1	-86.9	966.3	219.6	5.78	5.56	2.00
6,868.0	56.40	173.20	6,669.5	-124.2	971.3	257.2	7.07	6.30	3.91
6,913.0	60.20	174.10	6,693.1	-162.2	975.5	295.5	8.61	8.44	2.00
6,958.0	64.30	175.50	6,714.1	-201.9	979.1	335.2	9.52	9.11	3.11
7,004.0	67.90	177.40	6,732.7	-243.9	981.7	377.2	8.69	7.83	4.13
7,049.0	70.70	178.10	6,748.6	-285.9	983.4	419.1	6.39	6.22	1.56
7,094.0	73.20	178.10	6,762.6	-328.7	984.8	461.6	5.56	5.56	0.00
7,139.0	75.60	178.30	6,774.7	-372.0	986.1	504.7	5.35	5.33	0.44
7,185.0	78.30	177.70	6,785.0	-416.8	987.7	549.3	6.01	5.87	-1.30
7,230.0	80.50	177.20	6,793.3	-461.0	989.7	593.3	5.01	4.89	-1.11
7,275.0	83.20	177.20	6,799.7	-505.4	991.9	637.6	6.00	6.00	0.00
7,320.0	86.10	177.00	6,803.9	-550.2	994.1	682.3	6.46	6.44	-0.44
7,338.0	88.00	177.20	6,804.8	-568.1	995.0	700.2	10.61	10.56	1.11
7,376.8	88.95	177.20	6,805.8	-606.9	996.9	738.8	2.46	2.46	0.00
7"									
7,399.0	89.50	177.20	6,806.1	-629.0	998.0	760.9	2.46	2.46	0.00
7,493.0	89.90	176.70	6,806.6	-722.9	1,003.0	854.6	0.68	0.43	-0.53
7,586.0	90.10	177.00	6,806.6	-815.8	1,008.1	947.2	0.39	0.22	0.32
7,680.0	90.50	179.00	6,806.1	-909.7	1,011.4	1,040.7	2.17	0.43	2.13
7,774.0	90.00	180.90	6,805.7	-1,003.7	1,011.5	1,133.8	2.09	-0.53	2.02
7,867.0	89.90	180.00	6,805.8	-1,096.7	1,010.8	1,225.8	0.97	-0.11	-0.97
7,961.0	90.40	180.00	6,805.6	-1,190.7	1,010.8	1,318.9	0.53	0.53	0.00
8,054.0	90.40	179.70	6,804.9	-1,283.7	1,011.0	1,411.1	0.32	0.00	-0.32
8,148.0	89.00	178.40	6,805.4	-1,377.7	1,012.6	1,504.4	2.03	-1.49	-1.38
8,242.0	89.00	179.50	6,807.1	-1,471.6	1,014.3	1,597.7	1.17	0.00	1.17
8,335.0	90.30	181.30	6,807.6	-1,564.6	1,013.6	1,689.7	2.39	1.40	1.94
Deepest TVD Drilled									
8,429.0	91.80	182.30	6,805.9	-1,658.6	1,010.7	1,782.3	1.92	1.60	1.06
8,522.0	91.90	180.90	6,802.9	-1,751.5	1,008.1	1,874.0	1.51	0.11	-1.51
8,616.0	91.10	178.40	6,800.4	-1,845.4	1,008.7	1,967.1	2.79	-0.85	-2.66
8,709.0	89.30	177.90	6,800.1	-1,938.4	1,011.7	2,059.6	2.01	-1.94	-0.54
8,803.0	89.10	178.30	6,801.4	-2,032.3	1,014.8	2,153.1	0.48	-0.21	0.43
8,897.0	89.50	179.00	6,802.6	-2,126.3	1,017.0	2,246.4	0.86	0.43	0.74

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Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,990.0	88.50	180.40	6,804.2	-2,219.3	1,017.5	2,338.6	1.85	-1.08	1.51
9,084.0	89.60	180.20	6,805.8	-2,313.3	1,017.0	2,431.6	1.19	1.17	-0.21
9,177.0	90.70	181.30	6,805.5	-2,406.2	1,015.8	2,523.5	1.67	1.18	1.18
9,299.0	91.70	182.10	6,803.0	-2,528.2	1,012.1	2,643.8	1.05	0.82	0.66
9,389.0	90.40	181.40	6,801.3	-2,618.1	1,009.4	2,732.5	1.64	-1.44	-0.78
9,480.0	89.10	180.40	6,801.7	-2,709.1	1,008.0	2,822.4	1.80	-1.43	-1.10
9,570.0	89.80	180.00	6,802.6	-2,799.1	1,007.7	2,911.5	0.90	0.78	-0.44
9,660.0	90.60	180.00	6,802.3	-2,889.1	1,007.7	3,000.6	0.89	0.89	0.00
9,751.0	91.40	179.90	6,800.7	-2,980.1	1,007.7	3,090.7	0.89	0.88	-0.11
9,841.0	90.90	179.90	6,798.9	-3,070.1	1,007.9	3,179.9	0.56	-0.56	0.00
9,932.0	91.00	179.10	6,797.4	-3,161.0	1,008.7	3,270.1	0.89	0.11	-0.88
10,022.0	89.50	178.10	6,797.0	-3,251.0	1,010.9	3,359.5	2.00	-1.67	-1.11
10,113.0	89.00	178.40	6,798.2	-3,342.0	1,013.7	3,450.0	0.64	-0.55	0.33
10,203.0	89.30	179.30	6,799.5	-3,431.9	1,015.5	3,539.3	1.05	0.33	1.00
10,293.0	90.30	181.10	6,799.8	-3,521.9	1,015.2	3,628.4	2.29	1.11	2.00
10,383.0	92.00	181.10	6,798.0	-3,611.9	1,013.4	3,717.3	1.89	1.89	0.00
10,473.0	92.90	180.70	6,794.1	-3,701.8	1,012.0	3,806.1	1.09	1.00	-0.44
10,564.0	91.70	180.00	6,790.5	-3,792.7	1,011.5	3,896.1	1.53	-1.32	-0.77
10,654.0	89.80	178.10	6,789.3	-3,882.7	1,013.0	3,985.4	2.99	-2.11	-2.11
10,745.0	89.30	177.90	6,790.0	-3,973.6	1,016.1	4,075.9	0.59	-0.55	-0.22
10,835.0	90.10	179.00	6,790.5	-4,063.6	1,018.6	4,165.3	1.51	0.89	1.22
10,926.0	90.70	179.50	6,789.9	-4,154.6	1,019.8	4,255.6	0.86	0.66	0.55
11,016.0	90.90	180.70	6,788.6	-4,244.6	1,019.6	4,344.7	1.35	0.22	1.33
11,107.0	90.40	180.70	6,787.6	-4,335.5	1,018.5	4,434.7	0.55	-0.55	0.00
11,197.0	89.70	180.70	6,787.5	-4,425.5	1,017.4	4,523.7	0.78	-0.78	0.00
11,287.0	89.30	180.60	6,788.3	-4,515.5	1,016.4	4,612.7	0.46	-0.44	-0.11
11,377.0	90.30	180.90	6,788.6	-4,605.5	1,015.2	4,701.6	1.16	1.11	0.33
11,468.0	90.80	180.60	6,787.7	-4,696.5	1,014.0	4,791.6	0.64	0.55	-0.33
11,558.0	90.60	178.30	6,786.6	-4,786.5	1,014.9	4,880.8	2.57	-0.22	-2.56
11,649.0	88.60	177.20	6,787.3	-4,877.4	1,018.4	4,971.4	2.51	-2.20	-1.21
11,739.0	88.80	180.40	6,789.3	-4,967.4	1,020.3	5,060.7	3.56	0.22	3.56
11,830.0	88.30	182.30	6,791.6	-5,058.3	1,018.2	5,150.5	2.16	-0.55	2.09
11,920.0	90.40	184.40	6,792.6	-5,148.1	1,012.9	5,238.7	3.30	2.33	2.33
12,010.0	90.80	184.60	6,791.7	-5,237.8	1,005.9	5,326.6	0.50	0.44	0.22
12,101.0	92.00	184.10	6,789.5	-5,328.6	999.0	5,415.5	1.43	1.32	-0.55
12,191.0	91.90	182.10	6,786.4	-5,418.4	994.1	5,503.8	2.22	-0.11	-2.22
12,282.0	92.30	181.30	6,783.1	-5,509.3	991.4	5,593.4	0.98	0.44	-0.88
12,372.0	89.70	180.20	6,781.5	-5,599.2	990.2	5,682.4	3.14	-2.89	-1.22
12,463.0	89.90	180.00	6,781.8	-5,690.2	990.1	5,772.5	0.31	0.22	-0.22
12,555.0	90.00	179.90	6,781.9	-5,782.2	990.1	5,863.6	0.15	0.11	-0.11
12,645.0	92.00	181.10	6,780.3	-5,872.2	989.4	5,952.6	2.59	2.22	1.33
12,736.0	90.30	179.10	6,778.5	-5,963.2	989.2	6,042.7	2.88	-1.87	-2.20
12,826.0	88.00	177.40	6,779.8	-6,053.1	991.9	6,132.1	3.18	-2.56	-1.89
12,917.0	89.70	176.90	6,781.7	-6,144.0	996.5	6,222.7	1.95	1.87	-0.55
13,007.0	87.90	179.50	6,783.5	-6,233.9	999.3	6,312.2	3.51	-2.00	2.89
13,097.0	88.50	178.60	6,786.4	-6,323.9	1,000.8	6,401.5	1.20	0.67	-1.00
13,188.0	89.90	179.10	6,787.6	-6,414.8	1,002.6	6,491.8	1.63	1.54	0.55
13,278.0	91.00	179.00	6,786.9	-6,504.8	1,004.1	6,581.2	1.23	1.22	-0.11
13,369.0	90.60	179.00	6,785.7	-6,595.8	1,005.7	6,671.5	0.44	-0.44	0.00
BHL 2137'FNL, 2385'FWL, SEC.33									

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Churchill 28M-443
<b>Project:</b>	SEC.28-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4645ft (Ensign Rig# 136 RKB - 13')
<b>Site:</b>	Churchill 28J-HZ Pad Sec.28-T5N-R64W	<b>MD Reference:</b>	WELL @ 4645ft (Ensign Rig# 136 RKB - 13')
<b>Well:</b>	Churchill 28M-443	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,376.8	6,805.8	7"		7	7-1/2

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
8,335.0	6,807.6	-1,564.6	1,013.6	Deepest TVD Drilled	

Checked By: _____	Approved By: _____	Date: _____
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